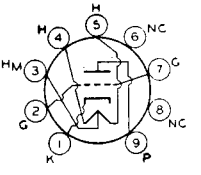
Heater Voltage (ac/dc):			
Series		12.6	volts
Parallel		6.3	volts
Heater Current:			
Series		0.225	ampere
Parallel		0.45	ampere
Heater Warm-up Time (Average)		11	seconds
Heater-Cathode Voltage:			
Peak value		±200 max	volts
Average value		100 max	volts
Direct Interelectrode Capacitance (Approx.):	Unshielded	Shielded[A]	
Grid to Plate (Each unit)	2	1.9	pF
Grid to Cathode and Heater (Each unit)	2.6	2.8	pF
Plate to Cathode and Heater:			
Unit No.1	0.44	1.4	pF
Unit No.2	0.36	1.6	pF

[A] With external shield connected to cathode of unit under test.

Class A_1 Amplifier (Each Unit)

MAXIMUM RATINGS (Design-Maximum Values)		
Plate Voltage	330	volts
Grid Voltage, Negative-bias value	55	volts
Plate Dissipation	2.5	watts
MAXIMUM CIRCUIT VALUES (Each Unit)		
Grid-Circuit Resistance:		
For fixed-bias operation	0.25	megohm
For cathode-bias operation	1	megohm

12B4A LOW-MU TRIODE



9AG

Miniature type used as vertical-deflection amplifier in television receivers. **Outlines section,** 6E; requires miniature 9-contact socket.

	Series	Parallel	
Heater Voltage	12.6	6.3	volts
Heater Current	0.3	0.6	ampere
Heater Warm-up Time	—	11	seconds
Heater-Cathode Voltage:			
Peak value		±200 max	volts
Average value		100 max	volts
Direct Interelectrode Capacitances:			
Grid to Plate		4.8	pF
Grid to Cathode and Heater		5	pF
Plate to Cathode and Heater		1.5	pF

Class A_1 Amplifier

MAXIMUM RATINGS (Design-Center Values)		
Plate Voltage	550	volts
Grid Voltage, Negative-bias value	50	volts
Plate Dissipation	5.5	watts
CHARACTERISTICS		
Plate Voltage	150	volts
Grid Voltage	−17.5	volts
Amplification Factor	6.5	
Plate Resistance (Approx.)	1030	ohms
Transconductance	6300	μmhos
Plate Current	34	mA
Plate Current for grid voltage of −23 volts	9.6	mA
Grid Voltage (Approx.) for plate current of 200 μA	−32	volts
MAXIMUM CIRCUIT VALUES		
Grid-Circuit Resistance:		
For fixed-bias operation	0.47	megohm
For cathode-bias operation	2.2	megohms

Vertical-Deflection Amplifier

For operation in a 525-line, 30-frame system

MAXIMUM RATINGS (Design-Center Values)		
DC Plate Voltage	550	volts
Peak Positive-Pulse Plate Voltage# (Absolute Maximum)	1000†	volts

Peak Negative-Pulse Grid Voltage	250	volts
Peak Cathode Current	105	mA
Average Cathode Current	30	mA
Plate Dissipation	5.5	watts
MAXIMUM CIRCUIT VALUE		
Grid-Circuit Resistance, for cathode-bias operation	2.2	megohms

Pulse duration must not exceed 15% of a vertical scanning cycle (2.5 milliseconds).
† Under no circumstances should this absolute value be exceeded.

Refer to chart at end of section. **12B8GT**

Refer to type 6BA6. **12BA6**

Refer to chart at end of section. **12BA7**

Refer to chart at end of section. **12BD6**

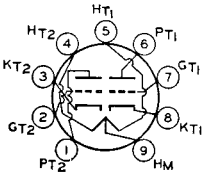
Refer to type 6BE3. **12BE3**

Refer to type 6BE6. **12BE6**

Refer to chart at end of section. **12BF6**

Refer to type 6BF11. **12BF11**

Refer to chart at end of section. **12BH7**



9A

MEDIUM-MU TWIN TRIODE **12BH7A**

Miniature type used as combined vertical-deflection amplifier and vertical oscillator, and as horizontal-deflection oscillator, in television receivers, and in phase-inverter and multivibrator circuits. **Outlines section,** 6E; requires miniature 9-contact socket. Each triode unit is independent of the other except for the common heater.

	Series	Parallel	
Heater Arrangement:			
Heater Voltage (ac/dc)	12.6	6.3	volts
Heater Current	0.3	0.6	ampere
Heater Warm-up Time (Average)	—	11	seconds
Heater-Cathode Voltage:			
Peak value		±200 max	volts
Average value		100 max	volts

	Unit No.1	Unit No.2	
Direct Interelectrode Capacitances (Approx.):			
Grid to Plate	2.6	2.6	pF
Grid to Cathode and Heater	3.2	3.2	pF
Plate to Cathode and Heater	0.5	0.4	pF
Plate of Unit No.1 to Plate of Unit No.2	0.8		pF

Class A_1 Amplifier (Each Unit)

MAXIMUM RATINGS (Design-Center Values)		
Plate Voltage	300	volts
Grid Voltage:		
Negative-bias value	50	volts
Positive-bias value	0	volts
Cathode Current	20	mA
Plate Dissipation:		
Each Plate	3.5	watts
Both plates (Both units operating)	7	watts
CHARACTERISTICS		
Plate Voltage	250	volts
Grid Voltage	−10.5	volts
Amplification Factor	16.5	
Plate Resistance (Approx.)	5300	ohms
Transconductance	3100	μmhos
Plate Current	11.5	mA
Plate Current for grid voltage of −14 volts	4	mA
Grid Voltage (Approx.) for plate current of 50 μA	−25	volts